MALYSHEV, B. F., Docent

Head, Department of Pathological Anatomy, Kirghizistan Medical Institute

"Mechanism of the development of intracraneal hemorrhages in the fetus," by [illegible]. L. Keylin, E. A. Stegaylo, and P. I. Ushchapovskiy, Akus. i gin. no.4:52-57 Jl-Ag 1952

MALYSHEV, B. F.

32748. MARDERSHTEYN, I. G. i MALYSHEV, B. F. O vozrastnykh izmeneniyakh shchitovidnoy zhelezy i o formakh zndemichyeskogo zoba v rayone G. Frunze. Sbornik nauch. Trudov (kirgiz. gos. med. in-t), T. IV, 1949, s. 3-18,—bibliogr: 12 nazv.

SO: Letopis' Zhurnal'nykh Statey, Vol. 44, Moskva, 1949

MALYSHEV, B.D.; YURGEL', B.I.

Use of automatic and semiautomatic welding in the assemblage of industrial pipelines. Avtom. svar. 15 no.8:79-81 Ag '62. (MIRA 15:7)

1. Trest No.7 Glavneftemontazh Ministerstva stroitel'stva RSFSR.

(Pipelines--Welding)

MALYSHEV, B.D., inzh.; PETROV, A.M., inzh.; KUZ'MIN, Yu.P., tekhn.

Formation of cracks in welding 14G2 steel construction elements.
Mont. i spets. rab. v stroi. 23 no. 2:18-21 F '61.
(MIRA 14:1)

1. Institut Proyektstal'konstruktsiya.
(Steel, Structural—Welding)

31442

Semiautomatic welding with ...

S/125/61/000/012/007/008
D040/D112

No. 11, 1957.

ASSOCIATION: "Proyektstal'konstruktsiya"

SUBMITTED: July 21, 1961.

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S/125/61/000/012/007/008
D040/D112

Semiautomatic welding with ...

The recommended conditions for vertical welding are (Table 3):

Metal thickness, mm	Edges	Gap width, mm	Welding current, amp	Voltage, v	Wire feed, m/hr	Gas volume, liter/hr
3	Without bevelling	1.5	130-140	20-22	191	8
5	ditto	2	130-140	20-22	191	8
10	V - shaped	2	110-120	22-24	156	8
14	ditto	2	110-120	22-24	156	8

X

A.S. Chesnokov, N.N. Belous, A.V. Rudchenko and N.Ye.Kurashin also took part in the work. There are 3 figures, 4 tables and 8 references: 6 Soviet and 2 non-Soviet-bloc. The two references to English-language publications read as follows: B.N. Davis and B.T. Telford, Manual Magnetic-Flux Gas-Shielded Arc Welding of Mild Steel, "Welding Journal", No. 5, 1957; A.F. Choninard and B.P. Monrol, A New CO_2 Welding Process, "Welding Journal",

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Semiautomatic welding with ... S/125/61/000/012/007/013
D040/D112

Table 2:

Weld cathetus, mm	Welding current, amp.	Voltage, v	Wire feed, m/hr	Welding speed, m/hr	Gas volume, liter/hr
4	200-240	26-28	191	23 - 25	8
6	300-320	30-32	306	13 - 15	8
8	320-340	32-34	306	10 - 12	8
10	320-340	32-34	306	7 - 9	8

In the case of vertical joints, the new welding method should be carried out from top to bottom and without vibratory movements, and is recommended for thin metal only; when carried out from bottom to top, it is not much faster than manual welding, requires skilled operators, and is very tiring. However, the productivity of the method in downhand welding was found to be approximately double that of manual welding with UONII-13/45 electrodes.

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S/125/61/000/012/007/008
D040/D112

Semiautomatic welding with ...

With these parameters the shape of the welds and the slag separation were the same as in welding with УОНИИ-13/45 (UONII-13/45), УП 2 НИИМВ (UP2 NIIMV) and other similar electrodes. High productivity was achieved under the following conditions for butt and T-joints (Tables 1 and 2 respectively):

Table 1:

Metal thickness, mm	Edges	Welding current, amp.	Voltage, v	Wire feed, m/hr	Gas volume, liter/hr
3	Without bevelling	260-280	28-30	250	8
5	ditto	300-320	30-32	306	8
10	V - shaped	300-320	30-32	306	8
14	ditto	300-320	30-32	306	8

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Semiautomatic welding with ... S/125/61/000/012/007/008
D040/D112

the moment of welding. The flux-holding bush ends in a calibrated aperture regulating the feed of flux into the arc. The flux is supplied from a flux feeder (Fig. 2) mounted on the wire feed mechanism of the ПДШ-500 (PDSh-500) semiautomatic welder. The flux is forced into the holder by compressed air or CO_2 from a container with a pressure of 0.8 to 1.2 gage atmospheres. The arc is shielded with CO_2, which is fed from an annular gas chamber in the casing of the holder. The gas is fed into the chamber through a heater, a reducer, a dryer and a magnetic gas valve on the control board of the semiautomatic welder. The flux chosen for the experiments had the following composition: 9% marble, 15% fluorite, 13% cryolite, 14% marshalite, 20% rutile, 7% ferromanganese, 2% ferrosilicon, 20% powder iron. Soda glass of 1.25-1.30 density and 0.6-0.8 mm grain size was used as a binder (15% of the weight of the dry mixture). The best results were obtained with:

welding wire diameter, mm ...	1.2	1.6	2.0
calibrated aperture diameter, mm	2.4	3.2	4.5,

and a flux quantity equal to 0.35 to 0.4 of the weight of deposited weld metal.

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S/125/61/000/012/007/008
D040/D112

1.2300 1573

AUTHORS: Malyshev, B.D., Kuz'min, Yu. P.

TITLE: Semiautomatic welding with combined flux-and-gas shielding

PERIODICAL: Avtomaticheskaya svarka, no. 12, 1961, 68-72

TEXT: The authors describe an investigation of magnetic-flux gas-shielded welding carried out in 1960 at the "Proyektstal'konstruktsiya" Institute, in which welded joints with satisfactory mechanical properties were obtained in СХЛ-4 (SKhL-4) and Ст.4 (St.4) steel plates, 3, 5, 10 and 14 mm thick. The article contains a detailed description of the special electrode holder (Fig. 1) designed for the experiments, the flux composition, and the welding process. The holder contains two microswitches in the handle for controlling the feed of welding wire and CO_2; a current-conducting pipe (4) with a tip (5), and a flux-feed pipe (6) in the casing. A gas-feed pipe (7) on the top of the casing is brazed into the nozzle (3). The nozzle consists of a gas chamber (8) and a flux-holding bush (9) with a permanent magnet (10) made of "alnisi", "alnico", or "magnico" alloy. The welding wire passes through a bore in the center of the magnet: the magnetic flux sticks to the wire at

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On the problem of high-strength steel ... S/125/61/000/006/006/010
D040/D112

ASSOCIATION: GPI "Proyektstal'konstruktsiya" ("Proyektstal'konstruktsiya" State Planning Institute)

SUBMITTED: January 30, 1961

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S/125/61/000/006/006/010
D040/D112

On the problem of high-strength steel ...

The "T-1" steel grade used in the U.S. and Japan is mentioned as an example of effective economy and high strength, i.e. 63 kg/mm^2 yield limit. Another example is 96 kg/mm^2 yield limit steel for light-weight structures developed in Italy. It is necessary to improve the quality of low-alloy steel, develop new chemical compositions for economical and weldable high-strength steel, to use new methods for thermic and mechanical strengthening. Structure designs must have more elements under tension load. The last recommendation is for production engineers to find welding methods and types of joints that will not impair the strength of high-strength steel. There are 5 figures, 1 table and 10 references: 4 Soviet-bloc and 6 non-Soviet-bloc. The four latest references to English-language publications read: K. J. Irvine, F. B. Pickring, Low-carbon Bainitic Steels, "Journal of the Iron and Steel Institute", v. 187, pp 292-309, No. 4, 1957; J. M. Hodge, L. C. Bibber, Low-Alloy Steel for Pressure Vessels, "Iron and Steel", XII, No. 29, pp 551-555, 1956; Literature Survey of High-Strength Steels, "Welding Journal", May, No. 5, pp 251-255, 1954; L. C. Hollister, F. Asce, R. D. Sunbury, M. Asce, High-Strength Steels Show Economy for Bridges, "Civil Engineering", June, v. 30, No. 6, pp 60-63, 1960.

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On the problem of high-strength steel ... D040/D112

steel that assumes a bainite structure upon hardening. One example of deformation strengthening is found in the use of expanded pipes for gas pipelines. Cold stretching in sheet stretching machines suggested by N. D. Kuzema and A. V. Prokhorov (Ref. 4: "Stal'", no. 8, 1960) should be used in rolling shops. Deformation strengthening was not used for structur steel because of the fear that it would raise embrittlement. But is has been stated in experiments at "Proyektstal'konstruktsiya" that slight elongation of the outer fiber raised the yield limit in low-alloy steel by 3.8 - 6.4 kg/mm^2, reduced the elongation only 1.3 - 2.2%, did not change the ultimate tensile strenght and reduction of area, only insignificantly reduced the impact resistance. However, the critical brittleness point was slightly raised (by less than 20°C). In static tension tests deformation-strengthened specimens had high resistance to brittle rupture, and this shows that steel so strengthened can be used for static service structures. One more way to raise steel strenght is heat treatment. Institut kachestvennykh staley TsNIIChM (Institute of High Grade Steels of TsNIIChM) studied the problem in 1956-1957 in conjunction with "Proyektstal'konstruktsiya" and it was concluded that hardening raises the yield limit by 20-25%, which means that the volume of metal in structures can be cut 13-20%. The hardening costst are low.

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D040/D112

On the problem of high-strength steel ...

produced in 1960 blast furnace and recuperator casings as well as some other structures for the Novotul'skiy and the Magnitogorsk metallurgical plants, and the Chelyabinskiy zavod metallokonstruktsiy im. Ordzhonikidze (Chelyabinsk Metal Structures Plant im. Ordzhonikidze) used 700 tons of it for structures. A still cheaper silico-manganese steel, 15ГС (15GS), with the same properties as in the 14G2, will be available soon. But these two new grades cannot replace 15KhSND fully for they are not dependable for structures where strength is of critical importance. As nickel is scarce, 15KhSND ought to be produced at the Orsko-Khalilovskiy metallurgicheskiy kombinat (Orsk-Khalilovo Metallurgical Combine) from naturally alloyed ores. A promising replacement for 15KhSND is the МК (MK) or 10Г2СД (10G2SD), and М (M), or 09Г2ДТ (09G2DT) of the Zhdanovskiy metallurgicheskiy zavod (Zhdanov Metallurgical Plant); its applicability should be checked without delay. The authors recommend the use of foreign bainite with 0.5% Mo and 0.001-0.004% B, having a 40-90 kg/mm yield limit, and the revision of the GOST standard that sets narrow limits for thickness of structural low-alloy steel. Cold working is an effective means for raising strength of structural steel, but it is only very little used. It is pointed out that the yield limit of steel rises with increase of the degree of cold deformation, particularly of low-alloy

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22942

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S/125/61/000/006/006/010
D040/D112

AUTHORS: Mel'nikov, N. P., Gladshteyn, L. I., Malyshev, B. D.

TITLE: On the problem of high-strength steel application for welded structures

PERIODICAL: Avtomaticheskaya svarka, no. 6, 1961, 47-55

TEXT: The article is a general position review with practical suggestions made in view of the growing amount of steel used for industrial structures. The weight of structures is an acute problem. The ultimate strength of 250 kg/mm^2 reached in steel used in the machine industry shows what can be done by selecting the optimum chemical composition. Already 350 kg/mm^2 has been reached in experiments. The most used structural steel in the USSR was until 1960 the НЛ-2 (NL-2) grade, called 15ХСНД (15KhSND) in ГОСТ 5058-57 (GOST 5058-57). It is now forbidden to use it for structures because of high cost and high nickel and copper content. A manganese grade, 14Г2 (14G2) recommended in 1958 by TsNIIChM, TsNIISK and "Proyektstal'konstruktsiya" is coming into use in places: Dnepropetrovskiy zavod metallokonstruktsiy im. Babushkina (Dnepropetrovsk Metal Structures Plant im. Babushkin)

Card 1/5

MALYSHEV, B.

DEM'YANYUK, T.; MALYSHEV, B., teplotekhnik; MIKHALEV, N., kand.tekhn.nauk;
STOLPNER, Ye., nauchnyy sotrudnik.

Gas motor operated water-heater for bath houses. Zhil.-kom. khoz.
8 no.2:24-26 '58. (MIRA 11:2)

1.Glavnyy inzhener tresta ban' Lengorispolkoma (for Dem'yanyuk).
2.Bank No.65 g. Leningrada (for Malyshev). 3.Leningradskiy nauchno-issledovatel'skiy institut Akademii kommunal'nogo khozyaystva (for Stolpner).

(Semiconductors)
(Remote control)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900006-6

ZHUCHKEVICH, Vadim Andreyevich, kand.geograf.nauk; MALYSHEV, Andrey Yakovlevich, kand.geograf.nauk; ROGOZIN, Neofid Yermolayevich, kand.geograf.nauk; ZUYEV, Ye.M., red.; VOROBEY, P.S., tekhn.red.

[Cities and villages of the White Russian S.S.R.; historical and geographical outlines] Goroda i sela Belorusskoi SSR; instoriko-geograficheskie ocherki. Minsk, Gos.uchebno-pedagog. izd-vo M-va prosv. BSSR, 1959. 278 p. (MIRA 12:8)

(White Russia)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900006-6

MALYSHEV, A. Ya.

MALYSHEV, A. Ya. - "Polesskaya Oblast of the Belorussian SSR (Economic Geography Features)." Sub 13 Mar 52, Moscow Oblast Pedagogical Inst. (Dissertation for the Degree of Candidate in Geographical Sciences).

SO: Vechernaya Moskva January-December 1952

IBRAGIMOV, I.I.; MALYSHEV, A.V.; PETROV, V.V.

IUrii Vladimirovich Linnik, 1915- ; on his 50th birthday. Usp. mat. nauk 20 no.2:221-236 Mr-Ap '65.

(MIRA 18:5)

MALYSHEV, Aleksandr Vasil'yevich; PETROVSKIY, I.G., akademik, otv. red.; NIKOL'SKIY, S.M., prof., zam. otv. red.; TRAVIN, N.V., red. izd-va; KONDRAT'YEVA, M.N., tekhn. red.

[Representation of integers by positive quadratic forms] O predstavlenii tselykh chisel polozhitel'nymi kvadratichnymi formami. Moskva, Izd-vo Akad.nauk SSSR, 1962. 211 p. (Akademiia nauk SSSR. Matematicheskii institut. Trudy, vol.65.) (MIRA 15:6)

(Forms, Quadratic)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900006-6

MALYSHEV, A.V.; FADDEYEV, D.K.

Boris Alekseevich Venkov; on his 60th birthday. Usp. mat. nauk 16 no.4:235-240 Jl-Ag '61. (MIRA 14:8)
(Venkov, Boris Alekseevich, 1900-)

MALYSHEV, A.V.

New variant of the proof of the Stuff-Minkowski theorem on the finiteness of the number of edges in Hermites reduction region. Usp. mat. nauk 16 no.2:127-129 Mr-Ap '61. (MIRA 14:5)
(Forms, Quadratic)

MALYSHEV, A. V.

Doc Phys-Math Sci - (diss) "Representation of whole numbers by positive quadratic forms." Leningrad, 1961. 15 pp; (Leningrad Order of Lenin State Univ imeni A. A. Zhdanov); 180 copies; price not given; bibliography on pp 13-15 (35 entries); (KL, 6-61 sup, 191)

86373

S/020/60/133/006/022/031XX
C 111/ C 333

Representation of Integers by Positive Quadratic Forms With Four and More Variables

[Abstracter's note: (Ref. 3) is a paper of the author in Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 5].

ASSOCIATION: Leningradskoye otdeleniye Matematicheskogo instituta imeni V. A. Steklova Akademii nauk SSSR (Leningrad Branch of the Mathematical Institute imeni V. A. Steklov of the Academy of Sciences USSR)

PRESENTED: April 9, 1960, by J. M. Vinogradov, Academician

SUBMITTED: April 6, 1960

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86373

S/020/60/133/006/022/031XX
C 111/ C 333

Representation of Integers by Positive Quadratic Forms With Four and More Variables

$$(5)\ R_{g;\ b_1,\ldots,\ b_n}(f,m) = \frac{\pi^{\frac{n}{2}} m^{\frac{n}{2}-1}}{d^{\frac{1}{2}}\,\Gamma(\frac{n}{2})}\ H_{g;\ b_1,\ldots,\ b_n}(f;\ m) +$$

$$+\ O(d^{\frac{n}{4}+\frac{3}{2}}\ g^{\frac{3}{2}n+2}\ \cdot\ m^{\frac{n}{4}-\frac{1}{4}+\varepsilon})$$

where the constants in O depend only on n and ε. Under some additional conditions the remainder term for $m \to \infty$ is infinitely small compared with the main term. In the formula for $r_{g;\ b_1,\ldots,\ b_n}$ H is replaced by a finite sum of H-series, moreover the remainder term is changed. The author formulates five theorems with four asymptotic series without proof.

There are 3 Soviet references.

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C 111/ C 333

Representation of Integers by Positive Quadratic Forms With Four and More Variables

on the generalized Gaussian sums $S_{g}; b_1, \ldots, b_n$ (see (Ref.3)) in order to give asymptotic formulas for $R_{g;b}$ and $r_{g;b}$ with the aid of the singular series

X

$$(1)\quad H_{g}; b_1, \ldots, b_n (f; m) = \sum_{q=1}^{\infty} \left\{ \sum_{h (\mathrm{mod}\ g)}{}' q^{-n} S_{g}; b_1, \ldots, b_n (hf; q)\, e^{-2\pi i \frac{mh}{q}} \right\}.$$

If e. g. the domain $\Omega_{f,m}$ is identical with the entire ellipsoid $f = m$, then it is

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86373

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S/020/60/133/006/022/031XX
C 111/ C 333

AUTHOR: Malyshev, A. V.

TITLE: Representation of Integers by Positive Quadratic Forms With Four and More Variables

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 6, pp. 1294-1297

TEXT: Let

$$f = \sum_{\alpha,\beta=1}^{n} a_{\alpha\beta}\, x_\alpha\, x_\beta$$

be a quadratic form with integer coefficients,; $n \leqq 4$; $\det \| a_{\alpha\beta} \| = d$. Let $\Omega_{f,m}$ be a domain on the ellipsoid $f = m$, where $m > 0$ is an integer. Let the integers $g > 0$ and $b_1, \ldots, b_n$ be given. Let $R_{g};\, b_1, \ldots, b_n\, (\Omega_{f,m})$ be the number of all integer points $(x_1, \ldots, x_n)$ in the elliptic domain $\Omega_{f,m}$ which are congruent with $(b_1, \ldots, b_n)$ mod g. Moreover, if the greatest common divisor of $x_1, \ldots, x_n$ is equal to 1, then the corresponding number is denoted with $r_{g};\, b_1, \ldots, b_n\, (\Omega_{f,m})$. The author uses his preceding results

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84646

S/020/60/133/005/025/034XX
C111/C222

Gaussian Sums and Kloosterman's Sums

system (mod q) which satisfy the condition $Q_1 \leqslant h^{-1} (\mathrm{mod}\ q) \leqslant Q_2 (\mathrm{mod}\ q)$ ($a^{-1}(\mathrm{mod}\ m)$ denotes the number $a_1 (\mathrm{mod}\ m)$ for which $a_1 a \equiv 1 (\mathrm{mod}\ m)$; the assertion $Q_1 \leqslant z \leqslant Q_2 (\mathrm{mod}\ q)$ means that there exists an element $z_1 \equiv z (\mathrm{mod}\ q)$ for which $Q_1 \leqslant z_1 \leqslant Q_2$); w is an integer and depends only on f, g and $B_1, \ldots, B_n$; $\varepsilon > 0$ arbitrarily small; $\varkappa_\varepsilon > 0$ constant depending only on n and ε; $w = 0$ if $B_1 = \ldots = B_n = 0$.

There are 7 non-Soviet references.

ASSOCIATION: Leningradskoye otdeleniye Matematicheskogo instituta im. V.A. Steklova Akademii nauk SSSR (Leningrad Department of the Mathematical Institute im. V.A. Steklov of the Academy of Sciences USSR)

PRESENTED: April 9, 1960, by I.M. Vinogradov, Academician

SUBMITTED: April 6, 1960

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Gaussian Sums and Kloosterman's Sums

From the theorems 1-3 and estimations of the sums of Kloosterman (Ref.4,6,7) there follows the following generalization and improvement of the lemma of Kloosterman (Ref.4):

Theorem 4: Let $f = f(x_1,\ldots,x_n)$ be an integral quadratic form with the determinant d; $g > 0$, $B_1,\ldots,B_n$, $C_1,\ldots,C_n$, $m, q > 0$, Q_1, Q_2- integers. Let $l_h = l_h(x_1,\ldots,x_n) = \sum_{\alpha=1}^{n}(hgB_\alpha + C_\alpha)x_\alpha$. Then

$$(8)\quad \left|\sum_{Q_1 \le h^{-1}(\mathrm{mod}\ q) \le Q_2(\mathrm{mod}\ q)}' S(hg^2f, l_h; q)\exp\left[-2\pi i\,\frac{mh}{q}\right]\right| <$$

$$\ll_\varepsilon q^{\frac{n+1}{2}+\varepsilon}\left\{\text{greatest common divisor}(2^{n+2}dg^{2n}m-w, q)\right\}^{\frac{1}{2}}\cdot\left\{\text{greatest common divisor}(2^{3n}d^3g^{2n+4}, q^{n+2})\right\}^{\frac{1}{2}}.$$

Here on the left side it is summed over all remainders h of the reduced

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Gaussian Sums and Kloosterman's Sums

where $\bar{\varphi}^{(p)}$ is a form algebraically reciprocal with $\varphi^{(p)} = \varphi^{(p)}(x_1, \ldots, x_{n(p)})$;

$f_1 = 4f-(4-4^{2-\tau_{s(2)}^{(2)}})2^{1_{s(2)}^{(2)}} \varphi_{s(2)}^{(2)}$.

The sums (1) reduce to sums (2)

$$(7)\ S_{g;\,b_1,\ldots,b_m}(f,\ell,q) = \frac{1}{g^m} \exp\left[2\pi i\,\frac{f(b_1,\ldots,b_m)+\ell(b_1,\ldots,b_m)}{q}\right] S(g^2 f, gL; q)$$

where

$$L = L(x_1,\ldots,x_m) = \ell(x_1,\ldots,x_m) + 2f(b_1,\ldots,b_m; x_1,\ldots,x_m) =$$

$$= \sum_{\alpha=1}^{m} \left(c_\alpha + \sum_{\beta=1}^{n} a_{\alpha\beta} b_\beta\right) x_\alpha .$$

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Gaussian Sums and Kloosterman's Sums

Then

$$S(f,l,q) = \frac{\prod\limits_{p\backslash q} \prod\limits_{\alpha=1}^{s(p)+1} \tau_{\alpha}(p)^{n_{\alpha}(p)}}{2^{2m}} \times S(f_1;4q) \times$$

$$\times \exp\Big[-\frac{2\pi i}{4q}\sum_{p\backslash q} Q(p)^{-1 (\mathrm{mod}\ p^{t(p)+1+(-1)^{p}})} \times Q(p) \times 2^{1+(-1)^{p+1}} \times$$

$$\times \Big\{2^{1+(-1)^{p+1}} \prod_{\alpha=1}^{s(p)} d_{\alpha}(p)\Big\}^{-1 (\mathrm{mod}\ p^{t(p)+1+(-1)^{p}})} \times p^{\sum\limits_{\alpha=1}^{s(p)} n_{\alpha}(p) e_{\alpha}(p)} \times$$

(6)

$$\times \bar{\bar{\varphi}}^{(p)}(c_1,\ldots,c_n(p))\Big],$$

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Gaussian Sums and Kloosterman's Sums

$$\tau_\alpha(2)=\begin{cases} 2, & \text{if } \alpha = s(2),\ \sigma(\varphi_\alpha^{(2)}) = 1,\ t(2) = l_\alpha^{(2)}+1, \\ & 2^{e_\alpha(2)} \backslash l_{s(2)}^{(2)} \text{ and all coefficients of } 2^{-e_\alpha(2)} l_\alpha^{(2)} \text{ are odd;} \\ 1, & \text{if } (s(2)+1-\alpha)\,\sigma(\varphi_\alpha^{(2)})(t(2)-e_\alpha(2)) > 1 \text{ and} \\ & 2^{e_\alpha(2)+1} \backslash l_\alpha^{(2)};\ \text{if } \alpha = s(2)+1 \text{ and } 2^{e_\alpha(2)} \backslash l_\alpha^{(2)}; \\ 0, & \text{if } 2^{e_\alpha(2)+1} \not\backslash l_\alpha^{(2)};\ \text{if } \alpha = s(2),\ \sigma(\varphi_\alpha^{(2)}) = 1, \\ & t(2) = e_\alpha(2)+1 \text{ and } 2^{e_\alpha(2)} \not\backslash l_\alpha^{(2)};\ \text{if } \alpha = s(2),\ \sigma(\varphi_\alpha^{(2)})=1, \\ & t(2) = e_\alpha(2)+1,\ 2^{e_\alpha(2)} \backslash l_\alpha^{(2)} \text{ and not all coefficients of} \\ & 2^{-e_\alpha(2)} l_\alpha^{(2)} \text{ are odd; if } \alpha = s(2)+1 \text{ and } 2^{e_\alpha(2)} \not\backslash l_\alpha^{(2)}. \end{cases}$$

$(p \backslash q;\ \alpha = 1,\ldots,s(p)+1).$

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S/020/60/133/005/025/034XX
C111/C222

Gaussian Sums and Kloosterman's Sums

prime number; $Q(p) = \frac{q}{p^{t(p)}}$. Let the integral quadratic form $f = f(x_1, \ldots, x_n) = f_1$ satisfy the congruence (4) for all prime numbers $p \setminus q$. Let $l = l(x_1, \ldots, x_n) = \sum_{\beta=1}^{n} c_\beta x_\beta$ be an integral linear form; $l = \sum_{\alpha}^{s(p)+1} l_\alpha^{(p)}$, where the variables of the form $l_\alpha^{(p)}$ are identical with the variables of the quadratic form $f_\alpha^{(p)}$. Let

$$\tau_\alpha(p) = \begin{cases} 1 & \text{if } p^{e_\alpha(p)} \setminus l_\alpha^{(p)} \\ 0 & \text{if } p^{e_\alpha(p)} \not\setminus l_\alpha^{(p)} \end{cases} \qquad (p \neq 2),$$

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Gaussian Sums and Koosterman's Sums

$$\times\, i^{\sum\limits_{p\mid q_1}\left(\frac{p-1}{2}\right)^2 \sum\limits_{\alpha=1}^{s(p)} n_\alpha(p)\left(t(p)-e_\alpha(p)\right)^2} \times \left(\frac{1+i}{\sqrt{2}}\right)^{\sum\limits_{\alpha=1}^{s(2)} n_\alpha(2)\left(2-\sigma\left(\varphi_\alpha^{(2)}\right)\right)} \times$$

$$\times\, (2q)^{\frac{n}{2}} \times 2^{\frac{1}{2}(n-n(2))(t(2)-1)+\frac{1}{2}\sum\limits_{\alpha=1}^{s(2)} n_\alpha(2)\, e_\alpha(2)} \times$$

$$\times \prod_{p\mid q_1} p^{\frac{1}{2}(n-n(p))t(p)+\frac{1}{2}\sum\limits_{\alpha=1}^{s(p)} n_\alpha(p)\, e_\alpha(p)}, \qquad (5)$$

where $e_2(\varphi)$ is the invariant of Hasse. Theorem 3 gives a similar assertion for $S(f,l;q)$, where $l \neq 0$.

Theorem 3: Let $q = \prod\limits_{p\mid q} p^{t(p)} = 2^{t(2)} q_1$; $t(2) \geqslant 0$; $t(p) > 0$ if p is an odd

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Gaussian Sums and Kloosterman's Sums

$$\times\, i^{\left(\frac{q_1-1}{2}\right)^2 \sum\limits_{\alpha=1}^{s-s(2)} n_\alpha(2)} \times \prod_{\alpha=1}^{s(2)} \left\{-c_2\left(\varphi_\alpha^{(2)}\right)\right\}^{\sigma\left(\varphi_\alpha^{(2)}\right)} \times$$

$$\times \prod_{\alpha=1}^{s(2)} \left(\frac{2}{d_\alpha(2)}\right)^{t(2)-e_\alpha(2)-\sigma\left(\varphi_\alpha^{(2)}\right)+1} \times \prod_{p \setminus q_1} \prod_{\alpha=1}^{s(p)} \left(\frac{d_\alpha(p)}{p}\right)^{t(p)-e_\alpha(p)} \times$$

$$\times\, i^{\sum\limits_{\alpha=1}^{s(2)} \sigma\left(\varphi_\alpha^{(2)}\right)^2 \left(\frac{d_\alpha(2)-1}{2}\right)^2} \times \prod_{p \setminus q_1} \left(\frac{2}{p}\right)^{t(2)\sum\limits_{\alpha=1}^{s(p)} n_\alpha(p)(t(p)-e_\alpha(p)) + t(p)\sum\limits_{\alpha=1}^{s(2)} n_\alpha(2)(t(2)-e_\alpha(2))} \times$$

$$\times \prod_{\substack{p \setminus q_1,\; p' \setminus q_1 \\ p \neq p'}} \left(\frac{p'}{p}\right)^{t(p')\sum\limits_{\alpha=1}^{s(p)} n_\alpha(p)(t(p)-e_\alpha(p))} \times$$

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Gaussian Sums and Kloosterman's Sums

$0 \leq n(p) \leq n$; $\sigma(\varphi_\alpha^{(2)}) = 1$, if $2 \nmid \varphi_\alpha^{(2)}$; $\sigma(\varphi_\alpha^{(2)}) = 2$, if $2 \mid \varphi_\alpha^{(2)}$;

$\varphi_{s(p)+1}^{(p)} = f_1 - \varphi^{(p)}$; $n_{s(p)+1}(p) = n - n(p)$; $e_{s(p)+1} = t(p)$. Let

$S(f;q) \equiv S(f,0;q)$; $S(f,1;q) \equiv S_{1;0,0,\ldots,0}(f,1;q)$.

Theorem 2: Let $q = \prod_{p \mid q} p^{t(p)} = 2^{t(2)} \cdot q_1$ be the decomposition of the integral positive number q into prime factors p; q_1 odd; $t(2) \geq 0$; $t(p) > 0$, if $p \neq 2$. Let for every $p \mid q$ the integral quadratic form f of n variables be equivalent (mod $p^{t(p)}$) to the form $\varphi^{(p)}$ of the type (4). Then $S(f;q) = 0$ if $\sigma(\varphi_{s(2)}^{(2)}) = 1$ and $e_{s(2)}(2)+1 = t(2)$. In the other case it holds

$$(5) \qquad S(f;q) = (-1)^{\frac{q_1-1}{2} \sum_{\alpha=1}^{s(2)} \sigma(\varphi_\alpha^{(2)}) \frac{(-1)^{n_\alpha(2)(n_\alpha(2)+1)/2 \, e_\alpha(2)} - 1}{2}}$$

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Gaussian Sums and Kloosterman's Sums

$$S_{g;b_1,\ldots,b_n}(f,l;q) = \begin{cases} d^n S_{g;b_1,\ldots,b_n}\left(\frac{f}{d}, \frac{l}{d}; \frac{q}{d}\right), & \text{if } d \setminus l \\ 0, & \text{if } d \nmid gl. \end{cases}$$

Further three cases are given.

Let $q = \prod_{p \setminus q} p^{t(p)}$. Every integral quadratic form f is equivalent to a form f_1 for which for every prime number $p \setminus q$ it holds

$$(4) \qquad f_1 \equiv \varphi^{(p)} = \sum_{\alpha=1}^{s(p)} p^{e_\alpha(p)} \varphi_\alpha^{(p)} \pmod{p^{t(p)}},$$

where $-1 \leq e_1(p) < e_2(p) < \ldots < e_{s(p)}(p) < t(p)$; $\varphi_1^{(n)}, \ldots, \varphi_{s(p)}^{(n)}$ - forms with integral matrices, the variables of which are pairwise disjoint; the the determinants $d_1(p), \ldots, d_{s(p)}(p)$ of these forms are relatively prime to p.

Let $n_\alpha(p)$ be the number of variables of $\varphi_\alpha^{(p)}$ $(\alpha = 1, \ldots, s(p))$; $n(p) = \sum_{\alpha=1}^{s(p)} n_\alpha(p)$,

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Gaussian Sums and Kloosterman's Sums

Theorem 1: 1) If $\mathcal{G}$ is a complete remainder system $(x_1, \ldots, x_n) \pmod q$, $(b'_1, \ldots, b'_n) \equiv (b_1, \ldots, b_n)$ (mod {greatest common divisor (g, q)}), then

$$S_{g;b_1,\ldots,b_n}(f,l,q) =$$

$$= \frac{1}{g^n} \sum_{(x_1,\ldots,x_n) \in \mathcal{G}} \exp\left[2\pi i \frac{f(gx_1+b'_1,\ldots,gx_n+b'_n)+l(gx_1+b'_1,\ldots,gx_n+b'_n)}{q}\right]$$

2) If $g = g_1 g_2$, greatest common divisor $(g_2, q_1) = 1$, then

$$S_{g;b_1,\ldots,b_n}(f,l,q) = \frac{1}{g_2^n} S_{g_1;b_1,\ldots,b_n}(f,l;q).$$

3) If the greatest common divisor is $(a,q) = 1$, then

$$S_{g;b_1,\ldots,b_n}(a^2 f, al; q) = S_{g;ab_1,\ldots,ab_n}(f,l;q).$$

4) If $d \setminus q$, $d \setminus f$, then

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16,1000

AUTHOR: Malyshev, A.V.

TITLE: Gaussian Sums and Kloosterman's Sums 16

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 5, pp. 1017-1020.

TEXT:

Let $f = f(x_1, \ldots, x_n) = \sum_{\alpha,\beta=1}^{n} a_{\alpha\beta} x_\alpha x_\beta$; $a_{\alpha\alpha}$ and $a_{\alpha\beta} + a_{\beta\alpha} = 2a_{\alpha\beta}$ $(\alpha \neq \beta)$ integers; $l = l(x_1, \ldots, x_n) = \sum_{\alpha=1}^{n} c_\alpha x_\alpha$, c_α - integers; $q, g > 0$ integral; b_i - integral. The sum

(1) $$S_{g;b_1,\ldots,b_n}(f,l;q) =$$

$$= \frac{1}{g^n} \sum_{x_1,\ldots,x_n=0}^{q-1} \exp\left[2\pi i \; \frac{f(gx_1+b_1,\ldots,gx_n+b_n)+l(gx_1+b_1,\ldots,gx_n+b_n)}{q}\right]$$

is denoted as an inhomogeneous multiple Gaussian sum mod g. The author gives formulas permitting a calculation of Gaussian sums in the general form (1)

Card 1/12

MALYSHEV, A.V.

Contribution to the theory of ternary quadratic forms. Part 4.
On the connection with Riemann's hypothesis. Vest.LGU 15
no.7:14-27 '60. (MIRA 13:4)
(Numbers, Theory of)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900006-6

MALYSHEV, A.V.

Theory of ternary quadratic forms. Pt.3: Representation of large numbers as positive forms of odd relatively prime invariants. Vest. LGU 15 no.1:70-84 '60. (MIRA 13:1)

(Forms, Quadratic)

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S/042/60/015/003/011/016XX
C111/C222

Quadratic Forms in an Arbitrary Field. A Generalization of Polla's Theorem

$$f \sim g + \sum_{i \leqslant (q-s)-(n-r)} 2u_i v_i + h(P). \tag{10}$$

Here it is assumed that the variables of the forms $g = g(y_1,\ldots,y_m)$, $e = e(u_1,\ldots,u_k,v_1,\ldots,v_k) = \sum_{i \leqslant (q-s)-(n-r)} 2u_i u_v$ and $h = h(z_1,\ldots,z_l)$ are pairwise disjoint and that from $(q-s) \leqslant (n-r)$ there follows $e(u_1,\ldots,v_k) = 0$ (the case $m=0$ is not excluded).
In the special case $n=r$, $m=s$ one obtains the theorem of Polla (Ref. 1).
There is 1 non-Soviet reference.

SUBMITTED: October 31, 1958

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S/042/60/015/003/011/016XX
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16,1200

AUTHOR: Malyshev, A.V.

TITLE: Quadratic Forms in an Arbitrary Field. A Generalization of Polla's Theorem

PERIODICAL: Uspekhi matematicheskikh nauk, 1960, Vol.15, No.3, pp.167-172

TEXT:
(1) $$f = f(x_1, \ldots, x_n) = \sum_{i,j=1}^{n} a_{ij} x_i x_j$$

is called a quadratic form in the field P if $a_{ij} = a_{ji}$ belong to the field P. The rank of the matrix (a_{ij}) is called the rank of f. The following generalization of the theorem of Polla in the version of (Ref.1) is proved:
Theorem: In the field P the characteristic of which is different from 2, let be given two quadratic forms $f = f(x_1, \ldots, x_n)$ and $g = g(y_1, \ldots, y_m)$. Let r be the rank of f, let s be the rank of g. A representation of the rank q of the form g by the form f exists then and only then if $s \leq q \leq m$ and if there exists a form $h = h(z_1, \ldots, z_l)$ so that

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Generalized Kloosterman Sums and Their Estimations

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$$|K_r(u,v\ ;\ q)| \leq 2^{\nu}\sqrt{2q}\ \min\left\{\sqrt{\text{greatest common divisor }(u,q)},\ \sqrt{\text{greatest common divisor }(v,q)}\right\}$$

where ν is the number of the different prime divisors of q.
The author gives a more complicated estimation for the case where the summation in (1.1) is carried out over an incomplete remainder system.
The author mentions I.M. Vinogradov.
There are 10 references : 1 Soviet, 3 American, 1 Swedish and 5 German.

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APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900006-6

S/043/60/000/13/07/016
C111/C222

AUTHOR: Malyshev, A.V.

TITLE: Generalized Kloosterman Sums and Their Estimations

PERIODICAL: Vestnik Leningradskogo universiteta, Seriya matematiki, mekhaniki i astronomii, 1960, No. 13, pp, 59 - 75

TEXT: Let q be a positively integral, let r be a positive odd number all prime divisors of which are contained in q ; u,v - given integers. Let $x^1 = x^{-1}(\mathrm{mod}\ q)$ denote the fact $x^1 x \equiv 1(\mathrm{mod}\ q)$. The author considers sums

$$(1.1)\quad K_r(u,v\ ;\ q) = \sum_{x(\mathrm{mod}\ q)} \left(\frac{x}{r}\right) e^{2\pi i \frac{ux + vx^{-1}(\mathrm{mod}\ q)}{q}}$$

already investigated in single cases by Salié (Ref. 4) and Davenport (Ref.6), where it is summed over all x for which $0 \leq x < q$, $(x,q) = 1$.
Basing on results of (Ref. 4) and (Ref. 8) the author proves the estimation

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C 111/ C 333

On the theory of ternary . . .

integer quadratic forms of the determinant Δ m.

The proofs are based on the application of Hermitian equations and modify the methods of B. A. Venkov (Ref.6: Ob arifmetike kvaternionov [On the arithmetics of quaternions.] IAN SSSR, 205-246, 1922) and Yu. V. Linnik (Ref.5: O predstavlenii bol'shikh chisel polozhitel'nymi ternarnymi kvadratichnymi formami [On the represenation of large numbers by positive ternary quadratic forms].JAN SSSR, ser. matem., 4, 363-402, 1940).

There are 7 Soviet-bloc and 2 non-Soviet-bloc references. The reference to English-language publication reads as follows: B. W. Jones. The arithmetic theory of quadratic forms, 1950.

SUBMITTED: November 28, 1957

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C 111/ C 333

On the theory of ternary . . .

Theorem 4 is a special case of theorem 3.

Theorem 5: Let q be a prime number, aliquant with 2Δ ; g - - uneven numbers, aliquant with $\Omega\Delta$; Λ as theorem 2; m - - integer, aliquant with $2\Omega\Delta qg$, x_0, y_0, z_0 - - integer, where

$$f(x_0, y_0, z_0) \equiv m \pmod{8\Omega\Delta g}, \tag{1.9}$$

$$\left(\frac{-\Delta m}{q}\right) = 1 . \tag{1.10}$$

Let $T(f,q,\Lambda,m)$ denote the number of the integer representations (x,y,z) of m by f which lie in Λ and are congruent with (x_0, y_0, z_0) mod g. Then there exist constants m_0, $\varkappa > 0$, $\varkappa' > 0$ depending only on Ω, Δ, q, g and Λ such that for $m \geqq m_0$ it holds

$$\varkappa H(-\Delta m) < T(f,g,\Lambda;m) < \varkappa' H(-\Delta m), \tag{1.11}$$

where $H(-\Delta m)$ is the number of all classes of the positive, binary

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of coordinates and with the lower (according to Jordan) solid angle $\lambda > 0$. The integer m aliquant with $2\Omega\Delta qg$ and the integers x_0, y_0, z_0 satisfy

$$f(x_0, y_0, z_0) = m \pmod{8\,\Omega\,\Delta\, g}, \tag{1.4}$$

$$\left(\frac{-\Delta m}{q}\right) = 1 \tag{1.5}.$$

Let $t(f,g,\Lambda,m)$ denote the number of those primitive representations (x,y,z) of m by f which lie in Λ and are congruent mod g with (x_0, y_0, z_0). Then there exist constants m_0, $\varkappa > 0$, $\varkappa' > 0$ depending only on Ω, Δ, q, g and Λ such that for $m \geqslant m_0$ it holds

$$\varkappa h(-\Delta m) < t(f,g,\Lambda; m) < \varkappa' h(-\Delta m). \tag{1.6}$$

Theorem 3: The conclusion of theorem 2 is maintained if under conservation of the other conditions it is not demanded that q be aliquant with Ω (or if it is demanded that q be aliquant with 2Δ).

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let m be integer and aliquant with $2\,\Omega\,\Delta\,q$, where

$$f(x,y,z) \equiv m(\mathrm{mod}\ 8\,\Omega\,\Delta) \qquad (1.1)$$

is assumed to be soluble, and

$$\left(\frac{-\Delta m}{q}\right) = 1 \qquad (1.2)$$

Let $t(f,m)$ be the number of the primitive representations of the number m by the form f. Then there exist constants m_0, $\varkappa > 0$ and $\varkappa' > 0$ depending only on Ω, Δ and q, such that for $m \geqq m_0$ it holds

$$\varkappa h(-\Delta m) < t(f,m) < \varkappa' h(-\Delta m), \qquad (1.3)$$

where $h(-\Delta m)$ denotes the number of classes of the properly primitive positive binary quadratic form of the determinant Δm.

Theorem 2: Let q be as above; g - - uneven prime number, aliquant with $\Omega\,\Delta$; $\measuredangle$ - - conical domain with the point apex in the origin

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16.1000

AUTHOR: Malyshev, A. V.

TITLE: On the theory of ternary quadratic forms. III. On the representation of large numbers by positive forms of uneven coprime invariants

PERIODICAL: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 1, 1960, 70-84

TEXT: The paper is a continuation of A. V. Malyshev (Ref. 1: K teorii ternarnykh kvadratichnykh form. I. Ob arifmetike ermitionov [On the theory of ternary quadratic forms. I. On the arithmetics of the Hermitions]. Vestnik LGU, No. 7, 1959; Ref. 2: K teorii ternarnykh kvadratichnykh form. II. Ob odnoy teoreme Linnika [On the theory of ternary quadratic forms. II. On a theorem of Linnik]. Vestnik LGU, No. 13, 1959); the author uses the notations of (Ref.1,2).

In all the following theorems $f(x,y,z)$ is assumed to be an integer primitive positive ternary quadratic form of uneven coprime invariants $[\Omega, \Delta]$.

Theorem 1: Let q be a prime number which does not divide $2\Omega\Delta$;

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16(1)

AUTHOR: Malyshev, A.V. SOV/38-23-3-2/6

TITLE: On the Representation of Integers by Positive Quadratic Forms of Four and More Than Four Variables. I

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1959, Vol 23, Nr 3, pp 337-364 (USSR)

ABSTRACT: The paper contains a detailed representation and the proofs of the results announced in [Ref 22] on the representation of integers by positive forms $\sum_{i,j=1}^{s} a_{ij}x_ix_j$, $s \geqslant 4$, and on the asymptotic distribution of integral points on an ellipsoid. A former result of Tartakovskiy and a lemma of Kloosterman are generalized. The author mentions I.M.Vinogradov, and A.Z.Val'fish; he thanks Yu.V.Linnik for advices.
There are 22 references, 7 of which are Soviet, 5 American, 7 German, 1 Swedish, 1 Polish, and 1 English.

ASSOCIATION: Leningradskoye otdeleniye Matem. in-ta imeni V.A.Steklova Ak. nauk SSSR (Leningrad Section of the Mathematical Institute imeni V.A.Steklov, AS USSR)

PRESENTED: by I.M.Vinogradov, Academician
SUBMITTED: December 25, 1958

Card 1/1

MALYSHEV, A.V.

Theory of ternary quadratic forms. Part 1: Arithmetic of generalized quaternions. Vest.LGU 14 no.7:55-71 '59. (MIRA 12:5)
(Quaternions)

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On the Theory of Ternary Quadratic Forms II. SOV/43-59-13-7/16
On a Theorem of Linnik

is greater than $\varkappa h(-\Delta m)$, where $\varkappa > 0$ is a constant depending on Ω and Δ, and $h(-\Delta m)$ is the number of classes of positive binary proper primitive quadratic forms of the determinant Δm.
The author mentions B.A.Venkov.
There are 5 references, 3 of which are Soviet, and 2 English.

SUBMITTED: September 28, 1957

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APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900006-6

16(1)

AUTHOR: Malyshev, A.V. SOV/43-69-13-7/16

TITLE: On the Theory of Ternary Quadratic Forms II. On a Theorem of Linnik

PERIODICAL: Vestnik Leningradskogo universiteta, Seriya matematiki, mekhaniki i astronomii, 1959, Nr 13(3), pp 63-70 (USSR)

ABSTRACT: The present paper is a continuation of [Ref 5]. The principal result is an improvement of an older result of Yu.V.Linnik [Ref 1].

Theorem: Let $f(x,y,z)$ be a primitive, positive, ternary quadratic form with integral coefficients of uneven coprime invariants $[\Omega, \Delta]$. Ω is the greatest common divisor of the coefficients of the form $\bar{f}$ dual to f, $\Omega^2\Delta$ = det f. Let m be an integer relatively prime with $2\Omega\Delta$ for which the congruence

$$f(x,y,z) \equiv m (\mathrm{mod}\ 8\Omega\Delta)$$

is solvable in integers x,y,z. Then there exists an $s_0 = s_0(\Omega, \Delta)$ so that if m is divisible by the square of an integer $s \geqslant s_0$, then m is representable primitively by the form f. The number $t(f,m)$ of primitive representations of the number m by the form f

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16(1)

AUTHOR: Malyshev, A. V. SOV/43-59-7-7/17

TITLE: On the Theory of Ternary Quadratic Forms. I. On the Arithmetic of Hermitions (K teorii ternarnykh kvadratichnykh form. I. Ob arifmetike ermitionov)

PERIODICAL: Vestnik Leningradskogo universiteta, Seriya matematiki, mekhaniki i astronomii, 1959, Nr 7(2), pp 55-71 (USSR)

ABSTRACT: The present paper is the first part of an investigation of the arithmetic theory of positive ternary quadratic forms and the representation of great integers by such forms respectively. Here the author's results [Ref 2] valid only for forms of a very special form, shall be extended to the general case. The present first publication contains lemmas on the arithmetic of hermitions (generalized quaternions), which in essential are taken from the papers of Yu. V. Linnik [Ref 6,7] and Pall [Ref 8]. The author mentions Professor B. A. Venkov who firstly used the arithmetic of quaternions in the theory of ternary quadratic forms; furthermore the older papers of V. A. Tartakovskiy. The author thanks Yu. V. Linnik for advices.
There are 12 references, 8 of which are Soviet, 2 Swiss, and 2 American.

SUBMITTED: November 28, 1957

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On the Connection Between the Distribution Theory of the Zeros of the L-Series and the Arithmetics of Ternary Quadratic Forms SOV/20-122-3-5/57

There are 6 references, 5 of which are Soviet, and 1 American.

ASSOCIATION: Matematicheskiy institut imeni V.A. Steklova Akademii nauk SSSR (Mathematical Institute imeni V.A. Steklov of the Academy of Sciences of the USSR)

PRESENTED: May 16, 1958, by I.M. Vinogradov, Academician

SUBMITTED: May 15, 1958

Card 2/2

AUTHOR: Malyshev, A.V. SOV/20-122-3-5/57

TITLE: On the Connection Between the Distribution Theory of the Zeros of the L-Series and the Arithmetics of Ternary Quadratic Forms (O svyazi teorii raspredeleniya nuley L-ryadov s arifmetikoy ternarnykh kvadratichnykh form)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 3, pp 343-345 (USSR)

ABSTRACT: In [Ref 1] the author formulated some theorems on the representation of large numbers n by positive ternary quadratic forms $f(x,y,z)$ with odd aliquant invariants $[\Omega, \Delta]$. Now it is shown that the assumption $\left(\frac{-\Delta m}{q}\right) = 1$ of [Ref 1] may be replaced by the following hypothesis H: for sufficiently large m the Dirichlet L-functions

$$L(s) = \sum_{n=1}^{\infty} \frac{\chi(n)}{n^s} \quad (\mathrm{Re}\, s > 1), \quad \chi(n) = \left(\frac{-4\Omega^2 \Delta m}{n}\right)$$

possess no zeros in the domain $|s-1| < \frac{(\ln \ln m)^2 \ln \ln \ln m}{\sqrt{\ln m}}$.

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On the Representation of Large Numbers by Positive Ternary Quadratic Forms of Odd Relatively Prime Invariants 20-118-6-7/43

Let $t(f,g,\mathcal{L},m)$ be the number of primitive representations of the number m by the form f which lie in $\mathcal{L}$ and with (x_0,y_0,z_0) are congruent with respect to the modul g. Then there exist constants m_0, $\varkappa > 0$, $\varkappa' > 0$, which depend only on Ω, Δ, q, g and $\mathcal{L}$ such that for $m \geqslant m_0$

$$\varkappa h(-\Delta m) < t(f,g,\mathcal{L};m) < \varkappa' h(-\Delta m).$$

Here $h(-\Delta m)$ is the number of classes of positive binary proper primitive quadratic forms of the determinant Δ m. There are 9 references, 4 of which are Soviet, 3 German, 2 American.

ASSOCIATION: Leningradskoye otdeleniye matematicheskogo instituta imeni V.A.Steklova Akademii nauk SSSR (Leningrad Section of the Mathematical Institute imeni V.A.Steklov Academy of Sciences USSR)

PRESENTED: September 19, 1957, by I.M.Vinogradov, Academician

SUBMITTED: September 18, 1957

Card 2/2

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900006-6

AUTHOR: Malyshev, A.V. 20-118-6-7/43

TITLE: On the Representation of Large Numbers by Positive Ternary Quadratic Forms of Odd Relatively Prime Invariants (O predstavlenii bol'shikh chisel polozhitel'nymi ternarnymi kvadratichnymi formami nechetnykh vzaimno prostykh invariantov)

PERIODICAL: Doklady Akademii Nauk, 1958, Vol.118, Nr 6, pp 1078-1080 (USSR)

ABSTRACT: The author joins the investigations of Tartakovskiy [Ref 6] and Linnik [Ref 7,8] and formulates without proof 5 long theorems which generalize or improve the results due to Linnik and the author [Ref 9] essentially. The principal result reads: Theorem: Let $f(x,y,z)$ be an integral primitive positive ternary quadratic form of odd relatively prime invariants $[\Omega,\Delta]$, where Ω is the greatest common divisor of the coefficients of the form being dual to f and $\Omega^2\Delta$ = det f. Further let q be a prime number not dividing 2Δ, g - odd number being relatively prime with $\Omega\Delta$, $\mathcal{L}$ is a conic domain with the vertex in the origin and the lower (according to Jordan) solid angle $\lambda > 0$. Let the integer m which is relatively prime with $2\Omega\Delta qg$, and the integers x_0,y_0,z_0 satisfy the conditions

Card 1/2

$$f(x_0,y_0,z_0) \equiv m \pmod{8\Omega\Delta g}, \quad \left(\frac{-\Delta m}{q}\right) = 1.$$

AUTHOR: Malyshev, A.V. SOV/38-22-5-10/10

TITLE: Letter to the Editor (Pis'mo v redaktsiyu)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1958, Vol 22, Nr 5, pp 735 (USSR)

ABSTRACT: This is a correction of some inexactnesses in the formulations of the author's paper on the asymptotic distribution of integral points on an ellipsoid published in Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1957, Vol 21, pp 457-500.

Card 1/1

USCOMM-DC-61010

20-6/64

On the Distribution of Whole Points on a Four-Dimensional Sphere.

ASSOCIATION: Leningrad Branch, Mathematical Institute "V.A. Steklov", Academy of Sciences of the USSR.

PRESENTED BY: VINOGRADOV, I.M., Member of the Academy, on 8 December 1956

SUBMITTED: 3 December 1956

AVAILABLE: Library of Congress

Card 3/3

On the Distribution of Whole Points on a Four-Dimensional Sphere.

$n \rightarrow \infty$ and at fixed ω the mathematical interrelationship $r(\omega, n) =$
$= (\omega/2\pi^2) r(n) (1 + 0 (n^{-1/18 + \varepsilon}))$.

For an arbitrary cone Ω, which can be quadrated in accordance with Jordan, it is possible to derive the asymptotical formula $r(\Omega, n) \sim (\omega/2\pi^2) r(n)$.

The paper under review outlines the proof for the above first theorem, and then proceeds to give a certain generalization of this theorem. From the third theorem there results a further theorem for the arithmetics of the quaternions.

In analogy herto it is also possible to investigate the asymptotical distribution of the whole points upon the ellipsoids $f(x_1, x_2, \ldots x_5) = n$. In this context, f denotes an arbitrary integral positive quadratic form with $s \geqslant 4$ variables. (No reproduction).

Card 2/3

AUTHOR: MALYSHEV, A.V. 20-4/62

TITLE: On the Distribution of Whole Points on a Four-Dimensional Sphere (O raspredelenii tselykh tochek na chetyrekhmernoy sfere. Russian).

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 114, Nr 1, pp 25 - 28 (U.S.S.R.)

ABSTRACT: With the aid of the usual methods of the analytical theory of numbers (in particular, by means of the methods devised by H Kloosterman, Acta Meth. 49, 4o7 (1926) it is possible to prove the asymptotical uniformity of the distribution of the whole points (x_1, x_2, x_3, x_4) on the sphere $x_1^2 + x_2^2 + x_3^2 + x_4^2 = n$. In this context, n denotes an odd number. This result is interesting as such, and it is possible to make use of it also in the theory of the ternary quadratic forms. The paper under review discusses the main points of the proof. In this context, four theorems are listed and their proofs are indicated. The first of these theorems reads as follows:

Let Ω be a four-dimensional conic domain with its vertex in the coordinate origin (0,0,0,0) and with the solid angle $\omega > 0$; in this context, n denotes a positive odd number, and $r(\omega, n)$ stand for the number of the whole points of the sphere $x_1^2 + x_2^2 + x_3^2 + x_4^2 = n$ which lie in the domain Ω. Then we have at

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Asymptotic Distribution of Integer Points on Some Ellipsoids 38-4-2/10

points of $x_0^2 + y_0^2 + z_0^2 = m$ which lie in $\mathcal{L}$ and are congruent mod g with (x_0, y_0, z_0). For fixed $\mathcal{L}, g, q$ and $m \to \infty$ then it holds

$$t(\mathcal{L}, g, m) \sim \frac{\lambda}{4\pi} \frac{1}{g^2 \prod\limits_{p|g} \left(1 + \frac{\left(\frac{-m}{q}\right)}{p}\right)} t(m)$$

A similar theorem holds for ellipsoids. $t(m)$ denotes the number of primitive representations of the number m as a sum of three squares.

PRESENTED: By I.M. Vinogradov, Academician

SUBMITTED: June 25, 1956

AVAILABLE: Library of Congress

CARD 2/2

MALYSHEV, A.V.

AUTHOR: MALYSHEV, A.V. 38-4-2/10

TITLE: Asymptotic Distribution of Integer Points on Some Ellipsoids (Asimptoticheskoye raspredeleniye tochek na nekotorykh ellipsoidakh).

PERIODICAL: Izvestiya Akad.Nauk, Ser.Mat.,1957,Vol.21, Nr 4,pp.457-500(USSR)

ABSTRACT: The present paper terminates a series of publications of the author (Doklady Akad.Nauk 87, 175-178, 1952; 89, 405-406,1953; 93, 771-774, 1953; Vestnik LGU Nr19, 4, 18-34, 1956; Doklady Akad.Nauk 114, 25-28, 1957). He investigates the representation of large numbers m by positive ternary quadratic forms $f(x,y,z)$ and the distribution of the representations on the ellipsoid $f(x,y,z) = m$. The main result is formulated and proved in several ways, e.g.:
Let g be an odd integer, q a prime number $\neq 2$, $\mathcal{L}$ a measurable conic region with the apex in the origin and with the solid angle $\lambda > 0$. Let the integer m be aliquant with gq. The integers x_0, y_0, z_0 are assumed to satisfy the following conditions

$$m \equiv x_0^2 + y_0^2 + z_0^2 \pmod{8g}, \quad (x_0, y_0, z_0, 2) = 1, \quad \left(\frac{-m}{q}\right) = 1 .$$

Let $t(\mathcal{L}, g; m)$ denote the number of the primitive integer

CARD 1/2

MALYSHEV, A.V.

Integer points on ellipsoids. Vest.Len.un. 11 no.19:18-34 '56.
(MLRA 10:1)

(Ellipsoid) (Forms, Quadratic)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900006-6

Malyshev, A.V.

Transactions of the Third All-union Mathematical Congress (Cont.) Moscow' Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.

Lomadze, G. A. (Tbilisi). On Representation of Numbers With the Sums of Generalized Polygonal Numbers. 7

Malyshev, A. V. (Leningrad). Asymptotic Distribution of Integral Points on Some Ellipsoids. 7-8

There are 3 references, all USSR.

Popov, A. I. (Leningrad). Regarding the Theory of Ultra-exponential Function of G. F. Voronoy. There is 1 USSR reference. 8

Postnikov, A. G. (Moscow). Additive Problems with Increasing Number of Summands. 8-9

Postnikov, A. G. (Moscow). Exponential Trigonometric Sum 9-10

Postnikov, A. G. (Moscow). Recurrent Relations Between Diophantine Inequalities in the Field of Power Series. 10-11

Card 4/80

MALYSHEV, A.V.
[redacted]

Corrections to the article "Application of the arithmetic of quaternions in the theory of ternary quadratic forms and to the decomposition of numbers into cubes" UMN, 8 no.5:3-71,1953.
Usp.mat.nauk. 10 no.1:243-244 '55 (MLRA 8:6)
(Quaternions)(Numbers, Theory of)(Forms, Quadratic)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900006-6

MALYSHEV, A.V.

Asymptotic rule for the representation of numbers by certain positive ternary quadratic forms. Dokl.AN SSSR 93 no.5:771-774 D '53. (MLRA 6:12)

1. Predstavleno akademikom I.M.Vinogradovym.
(Numbers, Theory of) (Forms, Quadratic)

Mathematical Reviews
May 1954
Number Theory

10-7-54

Malyšev, A. V. On the representation of numbers by positive ternary quadratic forms. Doklady Akad. Nauk SSSR (N.S.) 89, 405–406 (1953). (Russian)

The author shows that the following theorem can be deduced rather easily from a theorem on the representations of large positive integers by sums of three squares which is stated in the paper reviewed second above. Let $f(x, y, z)$ be a positive ternary properly primitive quadratic form with invariants $[k, 1]$, where k is odd, suppose f belongs to the genus such that $(f|p)=(-1|p)$ for all primes p dividing k, and let g be an arbitrary odd positive integer. Suppose m, x_0, y_0, z_0 are integers satisfying the conditions: (i) $m\equiv 1, 2, 3, 5, 6 \pmod 8$; (ii) $(m, kg)=1$; (iii) $m\equiv f(x_0, y_0, z_0) \pmod{8kg}$; (iv) $(m|q)=(-1|q)$ for each prime q dividing g; (v) $m>m_0(k, g)$. Then there are more than $c(k, g)h(-m)$ primitive representations of the number m by the form $f(x, y, z)$ such that $x\equiv x_0$, $y\equiv y_0$, $z\equiv z_0 \pmod g$. Here $c(k, g)$ and $m_0(k, g)$ are positive numbers depending only on k and g, and $h(-m)$ is the number of classes of binary quadratic forms $au^2+buv+cv^2$ (with integral coefficients) such that $b^2-4ac=-4m$.

P. T. Bateman (Urbana, Ill.).

MALYSHEV, A. V.

MALYSHEV, A. V.

Mathematical Reviews
May 1954
Number Theory

10-7-54
LL

(2)

Linnik, Yu. V., and Malyšev, A. V. On integral points on a sphere. Doklady Akad. Nauk SSSR (N.S.) 89, 209–211 (1953). (Russian)

3
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0
0

Suppose q is a given odd prime number and λ is a given positive number less than unity. Using a result of E. M. Wright [Quart. J. Math., Oxford Ser. 7, 230–240 (1936), Theorem 1] and the main result of the paper reviewed above, the authors prove that there exist positive numbers c and m_0, depending on q and λ, such that if $m \equiv 1, 2, 3, 5, 6 \pmod 8$, $(-m|q)=1$, and $m>m_0$, then on any segment of the sphere $x^2+y^2+z^2=m$ which has surface area greater than $\lambda 4\pi m$ there are more than $cR(m)$ primitive lattice points, where $R(m)$ is the total number of primitive lattice points on the sphere mentioned. This is related to another result of Wright [Proc. London Math. Soc. (2) 42, 481–500 (1937), Theorem 2]. *P. T. Bateman* (Urbana, Ill.).

LINNIK, Yu.V.; MALYSHEV, A.V.

Application of the arithmetic of quaternions in the theory of ternary quadratic forms and to the decomposition of numbers into cubes. Usp.mat. nauk 8 no.5:3-71 S-O '53. (MLRA 6:10)
(Quaternions) (Forms quadratic) (Numbers, Theory of)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900006-6

PA 245T73

MALYSHEV, A. V.

USSR/Mathematics - Number Theory 11 Nov 52

"Representation of Large Numbers by Positive Ternary Quadratic Forms," A. V. Malyshev, Leningrad Dept of Math Inst imeni Steklov, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol 87, No 2, pp 175-178

Improves the inequality evaluations of Yu. V. Linnik ("Iz Ak Nauk SSSR, Ser Mat," 4, 363 (1940)) for the number of primitive representations and sums. Submitted by Acad I. M. Vinogradov 20 Sep 52.

245T73

MALYSHEV, A.V.

Geometry, Algebraic

Minkowski-Hlawka theorem on a radial body. Usp. mat. nauk 7 No. 2, 1952

9. Monthly List of Russian Accessions, Library of Congress, August ~~1953~~ 1952, Unclassified.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900006-6

L 8688-65
ACCESSION NR: AT4048280

O

trons is Maxwellian, and that the temperature varies with the excitation energy in accordance with the Fermi gas model. It is concluded that at the energies in question the difference between the thermodynamic temperature and the nuclear temperature may be appreciable, and that this difference must be taken into account in writing down the equation of state of the nucleus. In addition, the reaction (n, 2n) can affect the spectra of the inelastically scattered neutrons, especially at the upper end of the energy range. The results indicate that the Fermi gas model describes well the dependence of the temperature on the energy, and that the corrected temperatures agree with those calculated from the neutron resonance densities. "The authors thank L. N. Usachev for continuous interest in the work and V. M. Strutinskiy for valuable discussions." Orig. art. has: 2 figures and 4 formulas.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00

SUB CODE: NP NR REF SOV: 002 OTHER: 004

L 8688-65 BAEM(t)/SSD/AFWL
ACCESSION NR: AT4048290 S/0000/64/000/000/0001/0006

AUTHORS: Maly*shev, A. V.; Shubin, Yu. P.

B

TITLE: Equation of state of the nucleus derived from the spectra of inelastically scattered neutrons

SOURCE: Uravneniye sostoyaniya yadra iz spektrov neuprugo rasseyanny*kh neytronov

TOPIC TAGS: state equation, temperature dependence, neutron scattering, inelastic scattering, nuclear level density

ABSTRACT: The earlier experimental data on nuclear temperatures (I. V. Gordeyev et al., Yaderno-fizicheskiye konstanty* [Nuclear-Physics Constants], 1963; E. Erba et al., Nuovo Cim. XXII, 1237, 1961) are determined from the spectra of inelastic scattering of 2.5--15 MeV neutrons by the nuclei Fe, Co, Cd, Sn, Ta, Au, W, and Bi. It is assumed that the spectrum of the successively emitted neu-

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sections in the 10^3 - 10^5 range in isotopes for which there are no data on average parameters of the neutron resonances. The resultant accuracy is better than 50% in all cases except Sm^{154}. Orig. art. has: 4 figures, 6 formulas, and 1 table.

ASSOCIATION: None

SUBMITTED: 31Jan64 ENCL: 00 SUB CODE: NP

NR REF SOV: 010 OTHER: 014

Card 2/2 CC

L 8688-65 BAEM(t)/SSD/AFWL

ACCESSION NR: AP4046290 S/0000/64/000/000/0001/0006

ABSTRACT: This experiment was motivated by the fact that the presently available experimental data pertain essentially to isotopes that become activated upon capture of a neutron, and that there are practically no data for the majority of non-activating isotopes or for unstable isotopes. The authors therefore calculated the average cross sections for radiative neutron capture by 30 isotopes, Rb^{85}, $Zr^{90-92,94,96}$, $Mo^{92,94-98,100}$, $Sn^{112,114-120,122,124}$, and $Sm^{144,147-150,152,154}$, using the statistical theory of nuclear reactions, the values given by the optical model for the penetrability of the nuclear surface, and the density level corres-

Card 1/2

L 12114-65

ACCESSION NR: AP5005800

ponding to the Fermi-gas model. The results of the calculations are compared with the available experimental data at 25 keV energy, and demonstrate the feasibility of obtaining satisfactory qualitative estimates for the average capture cross-sections ... range in isotopes for which there are no data on the ...

Card 2/2

L 42114-65 EWA(h)/EWT(m) DM

ACCESSION NR: AP5005800

22
B

S/0089/65/018/002/0114/0118

AUTHOR: Dovbenko, A. G.; Zakharova, S. M.; Kolesov, V. Ye.; Malyshev, A. V.

TITLE: Calculation of average radiative capture cross sections of neutrons with energy 10^3 - 10^5 eV

SOURCE: Atomnaya energiya, v. 18, no. 2, 1965, 114-118.

TOPIC TAGS: radiative capture, capture cross section, neutron capture, rubidium, zirconium, molybdenum, tin, samarium

ABSTRACT: This experiment was motivated by the fact that the presently available experimental data pertain essentially to isotopes that become activated upon cap- [illegible] and that there are practically no data for the majority of non-

L 24245-65 EWT(m)/EWA(h) DM

ACCESSION NR: AP5001275 S/0089/64/017/006/0508/0509

AUTHOR: Malyshev, A. V.; Stavisskiy, Yu. Ya.; Shapar', A. V.

14 B

TITLE: Cross sections for radiation capture of fast neutrons in iron

SOURCE: Atomnaya energiya, v. 17, no. 6, 1964, 508-509

TOPIC TAGS: radiation neutron capture, neutron capture cross section, fast neutron, iron

ABSTRACT: It is known that the inelastic neutron scattering can greatly affect the dependence of the radioactive capture cross section of fast neutrons on energy. In order to elucidate this dependence for large neutron energies, σ_γ was measured for the natural iron isotopes mixture, for neutrons of 1, 1.2, and 1.4 Mev. The experimental method was described in Atomnaya Energiya 10, 264 (1961). It was found that for neutron energy over 900 kev, the capture cross section decreases. At 1.2 and 1.4 Mev, σ_γ is about 2 mbarn. The measured values are in good agreement with the theoretical computations by V. E. Kolesov et al (Neutron Physics, Moscow, 1961 p. 910) Orig. art. has: 1 figure

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L 8669-65

ACCESSION NR: AT4048277

Zn^{91}, and Sm^{150}, for which the error reached 50%, and Sm^{154}, for which the discrepancy was by a factor ≈ 2.7. An explanation is offered for this discrepancy. A tentative check on the energy dependence of the one-, two-, and three-photon widths for two values of the angular momentum of the compound nucleus Sm^{155} (I = 1/2 and 13/2) shows that the spin dependence of the radiation width is slight and is masked by the experimental error. "The authors thank L. N. Usachev for continuous interest in the work." Orig. art. has: 3 figures.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00

SUB CODE: NP NR REF SOV: 003 OTHER: 001

Card 3/3

L 8689-65

ACCESSION NR: AT4048277

contained in the formula for the nuclear-level density ρ in the Fermi-gas model (A. V. Maly*shev, ZhETF v. 45, 316, 1963) was also used. The excitation energy was close to the neutron binding energy B_n, and single-particle levels were assumed near the ground state of the nucleus. The radiative broadening of the compound-nucleus resonances was assumed due to electric dipole transitions. The product of the factor B, proportional to the mean square of the matrix element for the dipole transitions between levels close to the ground state, by $A^{-2/3}$, was found to depend little on A (range of variation 2--2.5) and to assume a minimum value near the closed shell. Radiation widths calculated under the assumption that this product is constant agree well with the experimental data. The radiative capture cross section $\sigma_{n\gamma}$ was calculated on the basis of these widths for 30 isotopes of Rb, Zn, Mo, Sn, and Sm in the energy range 10^3--10^5 eV and were found to agree with the level-density formula for most isotopes. Exceptions were $Sn^{122, 124}$,

Card 2/3

L 8689-65 AFWL/SSD/AFETR

ACCESSION NR: AT4048277 S/0000/64/000/000/0001/0006

B

AUTHORS: Zakharova, S. M.; Maly*shev, A. V.

TITLE: Calculation of average radiation widths and average neutron radiative capture cross sections

SOURCE: Raschet srednikh radiatsionny*kh shirin i srednikh secheniy radiatsionnogo zakhvata neytronov *

TOPIC TAGS: radiation line width, neutron capture, capture cross section, compound nucleus, dipole transition

ABSTRACT: The behavior of the factors contained in the Weisskopf formula for the average radiation width Γ_γ was investigated, as a function of the mass number A, on the basis of the experimental data of I. V. Gordeyev et al. (Yaderno-fizicheskiy konstanty* [Nuclear-Physics Constants], Moscow, 1963). The systematics of the parameters

* [no source given]

Card 1/3

MALYSHEV, A. V.; SHUBIN, Yu. N.

"The relation of nuclear state from the spectra of inelastically scattered neutrons."

report submitted for Intl Nuclear Data, Sci Working Group Mtg, IAEA, Vienna, 9-13 Nov 64.

ZAKHAROVA, S. M.; MALYSHEV, A. V.

"Computation of the mean radiation widths and mean cross-section of radiative capture of neutrons."

report submitted for Intl Nuclear Data Sci Working Group Mtg, IAEA, Vienna, 9-13 Nov 64.

ZAKHAROVA, S. M.; MALYSHEV, A. V., Obninsk

"Statistical model calculations of average radiation widths and average neutron radiative capture cross-sections."

report submitted for Intl Conf on Low & Medium Energies Nuclear Physics, Paris, 2-8 Jul 64

L 9105-65
ACCESSION NR: AT4048279

V. M. Strutinskiy for a discussion of the results and for valuable remarks." Orig. art. has: 3 figures.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00

SUB CODE: NP NR REF SOV: 002 OTHER: 010

Card 3/3

L 9105-65
ACCESSION NR: AT4048279

sented in the form of plots of the quantity $a/A^{2/3}$ (Z - mass number) vs. A, and of the energy dependence of the level density in the nuclei Al^{28} and Cl^{36}. The previously noted dependence of the level density on the neutron excess N - Z (N = neutron number, Z = proton number) is confirmed by the plot of $a/A^{2/3}$ vs. A. The fact that the parameters a for neighboring nuclei with different Z and N differ in the mean by not more than 10% made it possible to calculate the level density for a given total angular momentum accurate to a factor ~2. The agreement with the experimental data is assumed to be satisfactory but it is pointed out that other procedures are probably more accurate at low excitation energies. Some difficulties involved in the evaluation of the parameter σ are discussed. In principle, the parameter σ can be calculated by counting the transmission resonances of a sample containing a mixture of nuclei in the ground and isomeric states, but such samples are difficult to prepare in practice. "The author thanks L. N. Usachev, V. S. Stavinskiy, and N. S. Rabotnov for continuous interest and help, and

Card 2/3

L 9105-65 AFWL/SSD

ACCESSION NR: AT4048279 S/0000/64/000/0000/0001/0005

AUTHOR: Maly*shev, A. V.

B

TITLE: Nuclear level density in the Fermi gas model

SOURCE: Plotnost' yaderny*kh urovney v modeli Fermi-gaza, 1964, 01-05*

TOPIC TAGS: nuclear level density, neutron scattering, inelastic scattering, fission product, energy dependence, radiation line width

ABSTRACT: The author's earlier data (ZhETF v. 45, 316, 1963) are analyzed to determine the behavior of several parameters in the standard formula for the level density (T. Ericson, Adv. in Phys. v. 9, 425, 1960). The data on the average distances between the neutron s-resonances are used to calculate the parameter a (the density of the single-particle states near the Fermi surface), the nuclear temperature $t = (u/a)^{1/2}$, and the parameter σ, which determines the level angular-momentum distribution. The results are pre-

Card 1/3 *[no source given]

ACCESSION NR AM4021134 BOOK EXPLOITATION S/

Gordeyev, I. V.; Kardashev, D. A.; Maly*shev, A. V.

Nuclear physics constants; a manual (YAderno-fizicheskiye konstanty*; spravochnik), [2nd ed.], Moscow, Gosatomizdat, 1963, 507 p. illus., biblio., tables. Errata slip inserted. 4,500 copies printed. First ed. published in 1960 under title: Spravochnik po yaderno-fizicheskim konstantam dlya raschetov reaktorov.

TOPIC TAGS: nuclear physics constant, neutron cross section, resonance level, diffusion, nuclear energy, fission product

TABLE OF CONTENTS [abridged]:

Card 1/2

PHASE I BOOK EXPLOITATION SOV/4854

Gordeyev, I.V., D.A. Kardashev, and A.V. Malyshev

Spravochnik po yaderno-fizicheskim konstantam dlya raschetov reaktorov (Handbook of Nuclear Physics Constants for the Designing of Reactors) Moscow, Atomizdat, 1960. 280 p. Errata slip inserted. 8,500 copies printed.

Ed.: A.K. Krasin, Academician, Academy of Sciences BSSR: Ed.: A.I. Zavodchikova; Tech. Ed.: Ye.I. Mazel'.

PURPOSE: The book is intended for engineers and physicists concerned with the design and operation of nuclear reactors. It will be of interest to biophysicists, geophysicists, and chemists working on the production and utilization of isotopes. It may be used by students of physics at the university level.

COVERAGE: This handbook contains mainly the results of experimental work on nuclear physics constants, completed up to November 1958, including the data published during the Second International Conference on Peaceful Uses of Atomic Energy in 1958. No personalities are mentioned. References follow each chapter.

TABLE OF CONTENTS:

Card 1/5

VASIL'YEV, B.G., inzh.; MALYSHEV, A.S.

Use of synthetic materials in the fabrication of ship fittings. Sudostroenie 30 no.8:58-63 Ag '64. (MIRA 18:7)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900006-6

VASIL'YEV, B.G., inzh.; MALYSHEV, A.S., inzh.; SAZONOV, V.P., inzh.

Use of synthetic materials in ship piping and systems. Sudostroenie 30 no.8:55-58 Ag '64. (MIRA 18:7)

MALYSHEV, Aleksandr Sergeyevich, dots.; LYASHKEVICH, Pavel Arkad'yevich, kand. tekhn. nauk

[Mechanical drawing; dimensions on part drawings] Mashinostroitel'noe cherchenie; razmery na chertezhakh detalei. Moskva, Mosk. in-t radioelektroniki i gornoi elektromekhaniki, 1963. 15 p. (MIRA 17:9)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900006-6

MALYSHEV, Aleksandr Sergeyevich, dots.; ZIVENGAR, Lev Avgustovich, kand. tekhn. nauk

[Mechanical drawing; cuts and cross sections on drawings] Mashinostroitel'noe cherchenie; razrezy i secheniia na chertezhakh. Moskva, Mosk. in-t radioelektroniki i gornoi elektromekhaniki, 1963. 18 p. (MIRA 17:9)

MALYSHEV, A.S., dots.; KHANINAYEV, Zh.S., dots., red.

[Curves on surfaces, their intersections and evolutes; text for correspondence students] Krivye poverkhnosti, ikh peresechenie i razvertki; uchebnoe posobie dlia studentov-zaochnikov. Moskva, 1961. 31 p. (MIRA 16:4)

1. Moscow. Gornyy institut.
(Curves on surfaces)

MALYSHEV, A.S., dots.; KHANINAYEV, Zh.S., dots., red.

[Methods of solving metric problems; textbook for students]
Metody resheniia metricheskikh zadach; uchebnoe posobie dlia studentov. Moskva, 1961. 16 p. (MIRA 15:8)

1. Moscow. Gornyy institut. Kafedra nachertatel'noy geometrii i chercheniya.

(Geometry--Problems, exercises, etc.)

MALYSHEV, A. S.

Rotornyye Ekskavatory (Rotor Excavators), 60 p., Moscow, 1950.

MALYSHEV, A. P.

DECEASED

1964

TEXTILE MACHINERY

1962

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900006-6